REMARKS

Claim Status

Applicants express their sincere appreciation to the Examiner, Mr. Stephen M. D Agosta, for the courtesies extended to applicants' representative during the telephone interview conducted with him on March 15, 2011, and for his acknowledged assistance in furthering prosecution on the merits of the instant application. During the telephone interview, the subject matter of independent claims 8, 15 and 16 was discussed. No agreement with respect to patentability of the claims was reached. The within amendments and remarks memorialize and incorporate the substance of the telephone interview.

Claims 8-20 are currently pending, with claims 8, 15 and 16 being the only independent claims. Claims 8-20 have been amended. The amendments clarify the wording of the claims, and are cosmetic in nature. No new matter has been added. Reconsideration of the application, as herein amended, is respectfully requested.

Overview of the Office Action

Claims 8-20 stand provisionally rejected on the grounds of non-statutory obviousness-type double patenting as unpatentable over claims 1-17 of U.S. Application Serial No. 10/537,395 ("*Dronne*"). However, a notice of abandonment was issued on February 28, 2011 indicating that Application Serial No. 10/537,395 has been abandoned for failure to respond to an Office Action dated July 29, 2010. Therefore, this non-statutory obviousness-type double patenting rejection is moot.

Claims 8-10, 13, 15 and 16 stand rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Pub. No. 2003/0099196 ("*Sebire*") in view of U.S. Patent No. 7,023,835 ("*Haumont*") and U.S. Patent No. 6,668,175 ("*Almgren*").

Claims 11, 12, 17 and 19 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Sebire* in view of *Haumont* and *Almgren*, and further in view of U.S. Patent No. 6,985,739 ("*Spaling*"). Claims 14 and 20 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Sebire* in view of *Haumont* and *Almgren*, and further in view of U.S. Patent No. 6,016,311 ("*Gilbert*") and WO 02/03622 ("*Hurme*").

Applicants have carefully considered the Examiner's rejections and the comments provided in support thereof. For the following reasons, Applicants respectfully assert that all claims now presented for examination in the present application are patentable over the cited art.

Descriptive Summary of the Prior Art

Sebire discloses the use of multiple radio bearers for multimedia services, where first and second parts of a packet are identified, one of the first and second parts of the packet is classified as more important than the other part of the packet and that other part is classified as less important. *Sebire* explains that the more important part of the packet may be transmitted differently than the less important part of the packet (see paragraphs [0001] and [0006]).

Haumont discloses a method for "controlling Quality of Service (QoS) in mobile communications systems having a packet data transmission capability" (see col. 1, lines 6-8).

Almgren discloses "a method and an apparatus for providing radio access bearer services in a network comprising a core network and a radio access network on radio access bearers between said networks" (see col. 4, lines 9-12).

Gilbert discloses "an adaptive time division duplexing (ATDD) method and apparatus for duplexing transmissions in wireless communication systems". According to *Gilbert*, "ATDD … facilitates the efficient use of communication channels in wireless communication systems by adapting to the uplink and downlink bandwidth requirements of the channels. In accordance

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with the present invention, the communication link bandwidth requirements are continuously monitored using sets of pre-determined bandwidth requirement parameters" (see col. 4, lines 33-42).

Spaling discloses a method for determining a load condition of a cell without having to measure one or more radio parameters pertaining to the cell load, e.g., interference level (see Abstract).

Hurme discloses "a method for switching subscribers connecting to a switching apparatus providing services for the connected subscribers" (see pg. 1, lines 7-9).

Summary of the Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

The specification discloses a method for managing resources at a radio access level in a UMTS mobile communication network. Generally, it is known that under certain circumstances in which a radio access network is under a heavy load, the current level of resource use will render it difficult to accept a new resource allocation request at the required quality of service (QoS). In such situations, the 3GPP standard contemplates initiation of pre-emption procedures to recover the resources necessary for responding to the new resource allocation request at the required QoS. However, the 3GPP standard is silent as to and leaves unresolved the specific procedures and conditions/requirements to be considered or employed for implementing such resource pre-emption in the radio access network. The claimed invention is thus directed to overcoming this deficiency by establishing a precise framework for defining a strategy for sharing and allocating radio

resources of the radio access network based on a particular order relation between the various radio access bearers (RAB) that are provided for supporting service requests generated by a core network.

In accordance with the claimed invention, a priority level is assigned to each of the RABs to thereby create an order for the allocation of resources that is defined for each support service by a priority level sub-parameter of an Allocation/Retention Priority RAB parameter. Here, the value of the priority level is determined by taking into account a value of an Allocation/Retention Priority quality of service parameter of the core network and a value of at least one quality of service parameter associated with the type of service.

This claimed combination of parameters makes it possible to precisely and advantageously differentiate the various RABs for the allocation of resources, and enables the defining of a large number of priority levels.

Patentability of the Independent Claims under 35 U.S.C. §103(a)

Independent claim 8 has been amended to clarify the salient aspects of the claimed invention. Independent claim 8 recites, *inter alia*, "wherein, a priority level is defined for the requested service by a priority level sub-parameter of one of the quality of service parameters of the radio access network, said mapping [step] determining a value for said priority level sub-parameter based on an Allocation/Retention Priority quality of service parameter of the core network and a value of at least one parameter of said quality of service parameters of the radio access network associated with a type of service". Independent claims 15 and 16 have been correspondingly amended. The Examiner-cited art <u>fails</u> to teach or suggest this expressly-recited subject matter.

The Examiner (at pg. 7 and 9 of the Office Action) has acknowledged that *Sebire* is silent as to "a priority level being defined for the requested service by a priority level, said mapping

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step is designed to determine a value for said priority level sub-parameter based on an "Allocation Retention Priority" quality of service parameter of the <u>core network</u> and a value of at least one parameter of said quality of service parameters of the radio access network associated with the type of service" as recited in independent claims 8, 15 and 16, and cites *Haumont* and *Almgren* for these features.

Applicants disagree, however, that any proper combination of *Sebire, Haumont* and/or *Almgren* achieves the subject matter of independent claims 8, 15 and 16.

Independent claim 8 recites "said mapping determining a value for said priority level sub-parameter based <u>on an Allocation/Retention Priority quality of service parameter of the core network</u> and a value of at least one parameter of said quality of service parameters <u>of the radio access network associated with a type of service</u>". That is, the claimed value for the priority level sub-parameter is established based a QoS parameter of the <u>core network</u> and a QoS parameter of the <u>radio access network</u> associated with a type of service. Independent claims 15 and 16 recite corresponding features. The Examiner-proffered combination fails to achieve a system that includes this expressly-recited subject matter.

Sebire discloses a method for transmitting packets across a radio access network including identifying a first part of a packet and a second part of the packet, and classifying one of the first part and the second part as being more important than the other part. That is, the teachings of *Sebire* relate to a method for <u>managing the queuing of packets</u>. There is <u>no</u> teaching or suggestion whatsoever in *Sebire* of managing the allocation of radio resources in a mobile communication network. Thus, as acknowledged by the Examiner, there is clearly no disputing that *Sebire* <u>fails</u> to teach or suggest "said mapping determining a value for said priority level sub-parameter based on an Allocation/Retention Priority quality of service parameter of the core network and a value of at least one parameter of said quality of service parameters of the radio access network

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associated with a type of service", as recited in independent claim 8 and correspondingly recited in independent claims 15 and 16.

Haumont describes a method for transmitting data packets in multiple data flows to/from a mobile station in a mobile communications system, where a data transmission path is formed for routing data packets and multiple profiles are associated with the data transmission path, and where each profile comprises at least one quality of service parameter (QoS) parameter. In *Haumont*, each flow or data packet is provided with a profile tag indicating one of the multiple profiles. Scheduling and policing the transmission of individual data packets in the *Haumont* system is based on at least one QoS parameter of the profile indicated by the profile tag associated with a specific data flow. More particularly, *Haumont* (col. 5, line 35 to col. 6, line 17) describes processing of data packets. For example, *Haumont* (col. 5, lines 36-38) explains that "[q]uality of service (QoS) defines how the packet data units (PDUs) are handled during transmission through the GPRS network". *Haumont* (col. 5, lines 55-59) further explains that "a GPRS QoS profile contains five parameters: service precedence, delay class, reliability, and mean and peak bit rates. Service precedence defines some kind of priority for the packets-belonging to a certain PDP context (i.e. which packets will be dropped in case of congestion)". The teachings of *Haumont* are thus directed to the processing of data packets, which has nothing to do with managing the allocation of radio resources in a mobile communication network. *Haumont* fails to teach or suggest that a priority level is defined for each requested service by the "priority level" sub-parameter of one of the quality of service packets, as recited in independent claims 8, 15 and 16. As in *Sebire*, *Haumont* relates to a method for managing data packet queuing. *Haumont* does not teach the management of radio resource allocation in a mobile telecommunication network.

Almgren, for its part, discloses the processing of RAB requests to ensure a determined flow rate. *Almgren* (col. 14, lines 38-41) explains that an "RAB request may also include other

attributes, including a 'cost' the user is willing to pay for this RAB. The RAB request may be assigned an allocation/retention priority value. As an example, a priority value of 2 may be treated as being more important than a priority value of 3 but less important than a priority value of 1". While it may be true that *Almgren* teaches the use of an allocation/retention priority, there is no teaching or suggestion whatsoever that the allocation/retention priority of *Almgren* be used for determining a value of the priority level sub-parameter when mapping quality of service parameters. That is, *Almgren* fails to teach or suggest that the claimed value for the priority level sub-parameter is established based on a QoS parameter of the core network and a QoS parameter of the radio access network associated with a type of service, i.e., "said mapping determining a value for said priority level sub-parameter based on an Allocation/Retention Priority quality of service parameter of the core network and a value of at least one parameter of said quality of service parameters of the radio access network associated with a type of service", as expressly recited in independent claim 8 and correspondingly recited in independent claims 15 and 16.

Under the Examiner-proffered analysis, *Haumont* teaches "controlling QoS in a mobile … network having RNC/Core components and using mapping 'priority' and sub-parameters' (figure 3) to manage packet flows". Moreover, according to the Examiner *Almgren* teaches "a wireless/mobile network with RAN/Core … supporting end-to-end QoS), priority … and use of Allocation Retention Parameters". Applicants disagree. Even assuming, *arguendo*, that *Haumont* and *Almgren* teach this claimed subject matter – which applicants dispute – the combination of *Haumont* and *Almgren* fails to teach or suggest the expressly-recited subject matter of independent claims 8, 15 and 16. Independent claim 8, for example, recites "an Allocation/Retention Priority quality of service parameter of the core network" and "a value of at least one parameter of said quality of service parameters of the radio access network associated with a type of service". That is, the claimed value for the priority level sub-parameter is established based on a QoS

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parameter of the <u>core network</u> <u>and</u> a QoS parameter of the <u>radio access network</u> associated with a type of service.

The Examiner-proffered combination asserts that the QoS parameters of the references are based on the core networks of *Haumont* and *Almgren*. But the processing of the system achieved by *Sebire* in combination with *Haumont* and *Almgren* markedly differs from the processing performed in independent claim 8. Firstly, the Examiner asserts that the core network of *Sebire* provides mapping based on an Allocation/Retention Priority quality of service parameter of the <u>core network</u>. Secondly, the Examiner asserts that *Haumont* provides "a value of at least one parameter of said quality of service parameters <u>of the radio access network</u> <u>associated with a type of service</u>". However, *Haumont* <u>fails</u> to provide this expressly-recited subject matter, because under the Examiner-proffered analysis *Haumont* is alleged to teach "controlling QoS in a mobile ... network having <u>RNC/Core components</u> and using mapping 'priority' and sub-parameters' (figure 3) to manage packet flows", which contradicts what applicants have disclosed and claimed.

Independent claims 8, 15 and 16 <u>each</u> require the use of the Allocation/Retention Priority QoS parameter <u>of the core network</u> and the QoS parameters of the <u>radio access network</u> associated with a type of service, i.e., a combination of QoS parameters from <u>two</u> distinct networks. The cited-art <u>fails</u> to teach or suggest applicants' claimed combination of parameters for defining an order relation between RABs, and the teachings of *Sebire, Haumont* and *Almgren*, alone or in combination, provide the skilled person with <u>no</u> reason or motivation to modify the system of *Sebire* based on their teachings to achieve applicants' claimed subject matter, absent an impermissible artificial hindsight reconstruction based on applicant's own disclosure. *Sebire, Haumont* and/or *Almgren*, whether considered individually or in combination, thus <u>fail</u> to teach or suggest the express recitations of independent claims 8, 15 and 16.

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By virtue of the above-discussed differences between the express recitations of independent claims 8, 15 and 16 and the teachings of *Sebire* in combination with *Haumont* and *Almgren*, and the lack of any clear motivation for further modifying the reference teachings to achieve applicants' claimed invention, independent claims 8, 15 and 16 are deemed to be patentable over the combination of *Sebire*, *Haumont* and *Almgren* under 35 U.S.C. §103.

Patentability of Dependent Claims 11, 12, 14, 17, 19 and 20 under 35 U.S.C. §103

The Examiner (at pgs. 7 and 9 of the Office Action) has acknowledged that the combination of *Sebire*, *Haumont* and *Almgren* fails to teach the subject matter recited in dependent claims 11, 12, 17 and 19, and cites *Spauling* for these features. The Examiner (at pg. 9 of the Office Action) has also acknowledged that the combination of *Sebire*, *Haumont* and *Almgren* fails to teach the subject matter recited in dependent claims 14 and 20, and cites *Hurme* and *Gilbert* for these features.

Applicants disagree, however, that any proper combination of *Sebire*, *Haumont*, *Almgren*, *Spauling*, *Hurme* and/or *Gilbert* achieves the subject matter of dependent claims 11, 12, 14, 17, 19 and 20. At the very least, there is nothing in *Spauling*, *Hurme* and/or *Gilbert* to cure the above-noted deficiencies of *Sebire*, *Haumont* and *Almgren* concerning the lack of teachings of, *inter alia*, the claims 8 and 16 recited features of the priority level being defined for the requested service by a priority level sub-parameter of one of the quality of service parameters of the radio access network, where the priority level sub-parameter has a value determined based on an Allocation/Retention Priority quality of service parameter and a value of at least one parameter of the quality of service parameters.

Gilbert discloses "an adaptive time division duplexing (ATDD) method and apparatus for duplexing transmissions in wireless communication systems". *Spaling* discloses a method for

determining a load condition of a cell without having to measure one or more radio parameters pertaining to the cell load, e.g., interference level (see Abstract). *Hurme* discloses "a method for switching subscribers connecting to a switching apparatus providing services for the connected subscribers" (see pg. 1, lines 7-9).

Spauling, *Hurme* and *Gilbert* <u>fail</u> to teach or suggest "said mapping determining a value for said priority level sub-parameter based on an Allocation/Retention Priority quality of service parameter of the core network and a value of at least one parameter of said quality of service parameters of the radio access network associated with a type of service".

The combination of *Sebire*, *Haumont*, *Almgren*, *Spauling*, *Hurme* and/or *Gilbert* thus <u>fails</u> to teach or suggest the features and functionality expressly recited in independent claims 8 and 16, let alone in dependent claims 11, 12, 14, 17, 19 and/or 20. Dependent claims 11, 12, 14, 17, 19 and 20 are accordingly likewise deemed to be patentable over any proper combination of *Sebire*, *Haumont*, *Almgren*, *Spauling*, *Hurme* and *Gilbert*.

Dependent Claims

In view of the patentability of independent claims 8 and 16 for the reasons presented above, each of dependent claims 9-14 and 17-20 is deemed to be patentable therewith over the prior art. Moreover, each of these claims includes features which serve to still further distinguish the claimed invention over the applied references.

Conclusion

Based on all of the above, applicants submit that the present application is now in full and proper condition for allowance. Prompt and favorable action to this effect, and early passage of the application to issue, are solicited.

Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate an early resolution of any outstanding issues.

Respectfully submitted,
COHEN PONTANI LIEBERMAN & PAVANE LLP

By   /Lance J. Lieberman/
         Lance J. Lieberman
         Reg. No. 28,437
         551 Fifth Avenue, Suite 1210
         New York, New York 10176
         (212) 687-2770

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